Title (en)

Device and method for detecting a 3D structure of an object

Title (de)

Vorrichtung und Verfahren zum Erfassen einer 3D-Struktur eines Objekts

Title (fr)

Dispositif et procédé d'enregistrement d'une structure 3D d'un objet

Publication

EP 2947417 B1 20191218 (DE)

Application

EP 14169576 A 20140523

Priority

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Abstract (en)

[origin: CA2891887A1] An apparatus (1) for detecting a 3D structure of an object (2) comprising: - at least three laser emitters (3), each of which generates laser radiation (4, 5) at a wavelength, such that the wavelengths of the emitted laser radiation (4, 5) differ from one another, - optical devices (13, 18, 20), at least one of which is a beam splitter (13), which splits the laser radiation (4, 5) of the laser emitters (3) into a reference radiation (14) and an illumination radiation (15, 22), wherein the illumination radiation (15, 22) strikes the object (2) to be measured, is reflected by the object (2) as object radiation (23a, 23b) and interferes with the reference radiation (14), - a detector (19), which records the interference patterns formed due to the interference of the reference radiation (14) and the object radiation (15, 22), and - an analysis unit (26) for analysis of the recorded interference patterns connected to the detector (19). At least two of the laser emitters (3) emit laser radiation (4) in the invisible range. At least one of the laser emitters (3) is a color laser (3b), which emits colored laser radiation (5). The analysis unit (26) is designed to detect the object (2) in three dimensions, based on the interference patterns of the invisible laser radiation (4). The analysis unit (26) is additionally designed to deduce the color of the object (2) on the basis of the intensity of the colored object radiation (23b) reflected by the object (2).

IPC 8 full level

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CPC (source: EP US)

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